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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,027	11/30/2000	Alan F. Graves	12728ROUS01U	9975

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EXAMINER

PHAN, HANH

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/726,027

Applicant(s)

GRAVES ET AL.

Examiner

Hanh Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,9,10,18 and 25-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,9,10,18 and 25-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. Applicant's election without traverse of Species A corresponding to Figs. 2, 3 and 8, directed claims 1, 10, 11, 19 and 26-38 in Paper No. 3 is acknowledged.

However, in the Preliminary amendment, claim 2 is canceled and according to rule 126, the claims 1-38 are re-numbered as claims 1-37. Therefore, Claims 1, 10, 11, 19 and 26-38 now are re-numbered as claims 1, 9, 10, 18 and 25-37.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 9, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujita et al (US Patent No. 6,570,685).

Regarding claim 1, referring to figures 3, 5, 6, 9, 11 and 15, Fujita teaches a protection switching arrangement for optical switching systems comprising:

a plurality of optical switching matrices (i.e., optical switches 121-1 to 121-n, Fig. 3) having multiple inputs and multiple outputs and being operable to optical channel signals from any one of a plurality of the inputs to any one of the plurality of the outputs;

a plurality of wavelength division demultiplexers (152)(Fig. 3) coupled at its outputs to the inputs of the plurality of optical switching matrices for dividing a composite optical signal into optical channel signals and providing each optical channel signal to a corresponding optical switching matrix;

a spare wavelength division demultiplexer (160)(Fig. 3) coupled at its outputs to the inputs of the plurality of optical switching matrices for dividing a composite optical signal into optical channel signals; and

at least one optical protection switch (i.e., protection switch 111 and 112, Fig. 3) having a plurality of inputs and a plurality of straight-through outputs and at least one protection output and coupled at each of its straight through outputs to an input of a respective one of the plurality of wavelength division demultiplexers and coupled at its protection output to an input of the spare wavelength division demultiplexer (from col. 9, line 40 to col. 13, line 17).

Regarding claim 9, Fujita further teaches the optical channels are lambdas (Fig. 3).

Regarding claim 25, referring to figures 3, 5, 6, 9, 11 and 15, Fujita teaches a protection switching arrangement for an optical switching system, comprising:

a plurality of input demultiplexers (Fig. 3), each the input demultiplexer having at least one input and a plurality of outputs, at least one of the plurality of input demultiplexers forming a spare input demultiplexer (i.e., a spare input demultiplexer 160, Fig. 3); and

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at least one first optical protection switch (111, 112)(Fig. 3) having a plurality of inputs and a plurality of outputs, at least one of the plurality of outputs forming a spare output, the outputs being connected to the inputs of the input demultiplexers and the spare output being connected to the input of the spare input demultiplexer (from col. 9, line 40 to col. 13, line 17).

Regarding claim 26, Fujita further teaches the first optical protection switch is operable to couple an input associated with a faulty input demultiplexer to the spare output to enable the spare demultiplexer to serve as a backup for the faulty input demultiplexer (Fig. 3).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10, 18 and 27-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al (US Patent No. 6,570,685) in view of Kuroyanagi et al (US Patent No. 6,433,900).

Regarding claims 10, 27, 28, Fujita differs from claims 10, 27, 28 in that he fails to teach a plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the

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outputs of the corresponding wavelength division de-multiplexers. However, Kuroyanagi teaches a plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the corresponding wavelength division de-multiplexers (Figs. 14 and 15, col. 16, lines 4-67 and col. 17, lines 1-35). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the corresponding wavelength division de-multiplexers as taught by Kuroyanagi in the system of Fujita. One of ordinary skill in the art would have been motivated to do this since Kuroyanagi suggests in column 16, lines 4-67 and col. 17, lines 1-35 that using such the plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the corresponding wavelength division de-multiplexers have advantage of allowing providing a highly reliable communication can be secured by changed over the system from the working system to the protection system against breakage of an optical transmission path and failure of an optical transmission apparatus.

Regarding claim 18, the combination of Fujita and Kuroyanagi teaches the optical channels are  $\lambda$ s (Fig. 3 of Fujita and Figs. 14 and 15 of Kuroyanagi).

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Regarding claim 29, the combination of Fujita and Kuroyanagi teaches comprising a plurality of optical switching matrices, each the optical switching matrix having a plurality of inputs and a plurality of outputs, at least one of said optical switching matrices forming a spare optical switching matrix (Fig. 3 of Fujita and Figs. 14 and 15 of Kuroyanagi).

Regarding claims 30 and 31, the combination of Fujita and Kuroyanagi teaches the inputs of the optical switching matrices are connected to outputs of the second optical protection switches (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 32, the combination of Fujita and Kuroyanagi teaches the second optical protection switches are operable to couple an input associated with a faulty optical switching matrix to an output associated with the spare optical switching matrix to enable the spare optical switching matrix to serve as a backup for the faulty optical switching matrix (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 33, the combination of Fujita and Kuroyanagi teaches a plurality of third optical protection switches having inputs connected to the outputs of the optical switching matrices (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 34, the combination of Fujita and Kuroyanagi teaches each third optical protection switch has its inputs connected to each of the optical switching matrices (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 35, the combination of Fujita and Kuroyanagi teaches a plurality of multiplexers having inputs connected to outputs of the third optical protection switches (Figs. 14 and 15 of Kuroyanagi).

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Regarding claim 36, the combination of Fujita and Kuroyanagi teaches each multiplexer has a plurality of inputs and an output, and wherein each multiplexer has its inputs connected to outputs of a respective third optical protection switches (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 37, the combination of Fujita and Kuroyanagi teaches a fourth optical protection switch having inputs connected to outputs of the multiplexers (Fig. 3 of Fujita).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnson et al (US Patent No. 6,498,792) discloses method for switching signals.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.



Hanh Phan

01/09/04